

Application Number: 09/598,793

Filing Date: June 21, 2000

Title: DIGITAL FINGERPRINT IDENTIFICATION SYSTEM

Assignee: Microvision, Inc.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and the applicant and/or assignee reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application.

Listing of Claims:

1. (Currently amended): A method for resolving the most probable digital fingerprint from a circuit, the circuit outputting a digital fingerprint comprising a series of bits, the method comprising the steps of:

(a) polling the circuit, the circuit being disposed on a silicon die and comprising two or more devices formed on the silicon die, for a digital fingerprint, the digital fingerprint being based at least in part on an electrical characteristic of the two or more devices of the circuit due to a process by which the silicon die was manufactured, wherein the digital fingerprint comprises at least two sections, each section comprising a series of bits;

(b) recording the digital fingerprint;

(c) repeating steps (a) and (b) a desired number of times to result in [[a]] one or more fingerprinting [[value]] values for a corresponding iteration of said polling and said recording; and,

(d) calculating a most probable digital fingerprint from the one or more fingerprinting values yielded in steps (a) - (c);

(e) calculating a stability value of each bit in said digital fingerprint; and

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(f) for each section, storing the stability value of the least stable bit in each section in association with a section identifier and the most probable digital fingerprint calculated in step (d).

2. (Original): The method of claim 1 further comprising the step of (e) storing the most probable digital fingerprint

Claims 3-5 (Canceled)

6. (Currently amended): An apparatus providing a digital fingerprint comprising:
a digital fingerprint circuit, said digital fingerprint circuit outputting a digital fingerprint comprising a plurality of bits corresponding to electrical characteristics of a plurality of devices, the digital fingerprint circuit being disposed on a silicon die and comprising the plurality of devices formed on the silicon die, the digital fingerprint being based at least in part on an electrical characteristic of the plurality of devices of the circuit due to a process by which the silicon die was manufactured; and

a control circuit, said control circuit operably connected to the digital fingerprint circuit and programmed to iteratively read the digital fingerprint a predetermined number of times; and, wherein the control circuit calculates the most probable digital fingerprint based on the iterative reads of the digital fingerprint circuit, wherein the digital fingerprint comprises a plurality of sections, each of the sections comprising a plurality of bits, wherein the control circuit calculates a stability value for each bit of the digital fingerprint, and wherein, for each section of the digital fingerprint, the control circuit stores in the memory the stability value of the least stable bit.

Application Number: 09/598,793
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7. (Original): The apparatus of claim 6 further comprising
a memory operably connected to the control circuit;
wherein the control circuit stores the most probable digital fingerprint in the memory.

8. (Original): The apparatus of claim 6 wherein the control circuit calculates a stability value for at least one bit of the digital fingerprint based on the iterative reads of the digital fingerprint circuit.

Claim 9 (Canceled)

10. (Currently Amended): The apparatus of claim 96 further comprising means for transmitting the digital fingerprint and the stability values stored in the memory.

11. (Currently amended): A method for resolving an identification, said method comprising the steps of

(a) receiving a digital fingerprint corresponding to characteristics of a circuit, the circuit being disposed on a silicon die and comprising two or more devices formed on the silicon die, the digital fingerprint being based at least in part on an electrical characteristic of the two or more devices of the circuit due to a process by which the silicon die was manufactured;

(b) dividing the digital fingerprint into at least two sections, the sections comprising a series of bits;

(c) storing the sections in association with an index identification in a database; [[and]]

(d) repeating steps (a) - (c) a desired number of times[[.]];

- (e) calculating a stability value of each bit in said digital fingerprint;
- (f) for each section, storing the stability value of the least stable bit in each section in association with a section identifier;
- (g) scanning the database for sections stored in step (c) that match the sections of step (b); and
- (h) selecting the index identification associated with a statistically sufficient number of matching sections.

12. (Original): The method of claim 11 wherein said storing step (c) comprises the steps of

(c1) storing each section in a separate table in association with the index identification.

13. (Original): The method of claim 12 wherein separate database servers support each table.

Claim 14 (Canceled)

15. (Currently Amended): A method for identifying a digital fingerprint corresponding to an integrated circuit from a database including a population of fingerprints, the method comprising the steps of:

(a) receiving a digital fingerprint of the integrated circuit, the integrated circuit comprising two or more devices formed on the integrated circuit, the digital fingerprint being

Application Number: 09/598,793

Filing Date: June 21, 2000

Title: DIGITAL FINGERPRINT IDENTIFICATION SYSTEM

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based at least in part on an electrical characteristic of the two or more devices of the integrated circuit due to a process by which the integrated circuit was manufactured, wherein the digital fingerprint comprises at least two sections, wherein the sections comprise a series of bits;

(b) receiving section identifiers and corresponding stability values for each section of the digital fingerprint;

(c) for each section, storing the stability value of the least stable bit in association with the section identifier;

(d) using sections having the highest stability values, scanning for sections of the fingerprints stored in the database that match corresponding sections of the digital fingerprint received in step (a);

(e) selecting the digital fingerprint stored in the database associated with a statistically sufficient number of matching sections.

16. (Currently Amended): The method of claim 15 wherein the database comprises at least two section tables each of which stores a separate section of the fingerprints in association with a corresponding index identification; and wherein the scanning step (d) comprises scanning the section tables with corresponding sections of the digital fingerprint received in step (a).

17. (Currently Amended): The method of claim 16 wherein a separate database server supports each section table.

18. (Currently amended): The method of claim 15 further comprising the step of

(e~~g~~) transmitting the most probable digital fingerprint calculated in step (d), and the section identifiers and corresponding stability values stored in step (f).

19. (Currently amended): The method of claim 1~~5~~ further comprising the step of
(e~~g~~) transmitting at least two section identifiers and corresponding sections of the most probable digital fingerprint, the sections having the highest stability values calculated in step (e).

20. (Original): The method of claim 19 wherein the number of sections transmitted in step (g) is statistically sufficient to find a matching digital fingerprint.

21. (canceled)

22. (Currently Amended): The method of claim 2~~4~~16 further comprising the steps of
(i~~f~~) if no ~~index identification~~digital fingerprint corresponds to a statistically sufficient number of matching sections, scanning the database for all sections stored in the section tables step (e) that match the sections received in step (e~~a~~); and,
(j~~g~~) selecting the ~~index identification~~digital fingerprint associated with a statistically sufficient number of matching sections.

Claims 23-30 (Canceled)